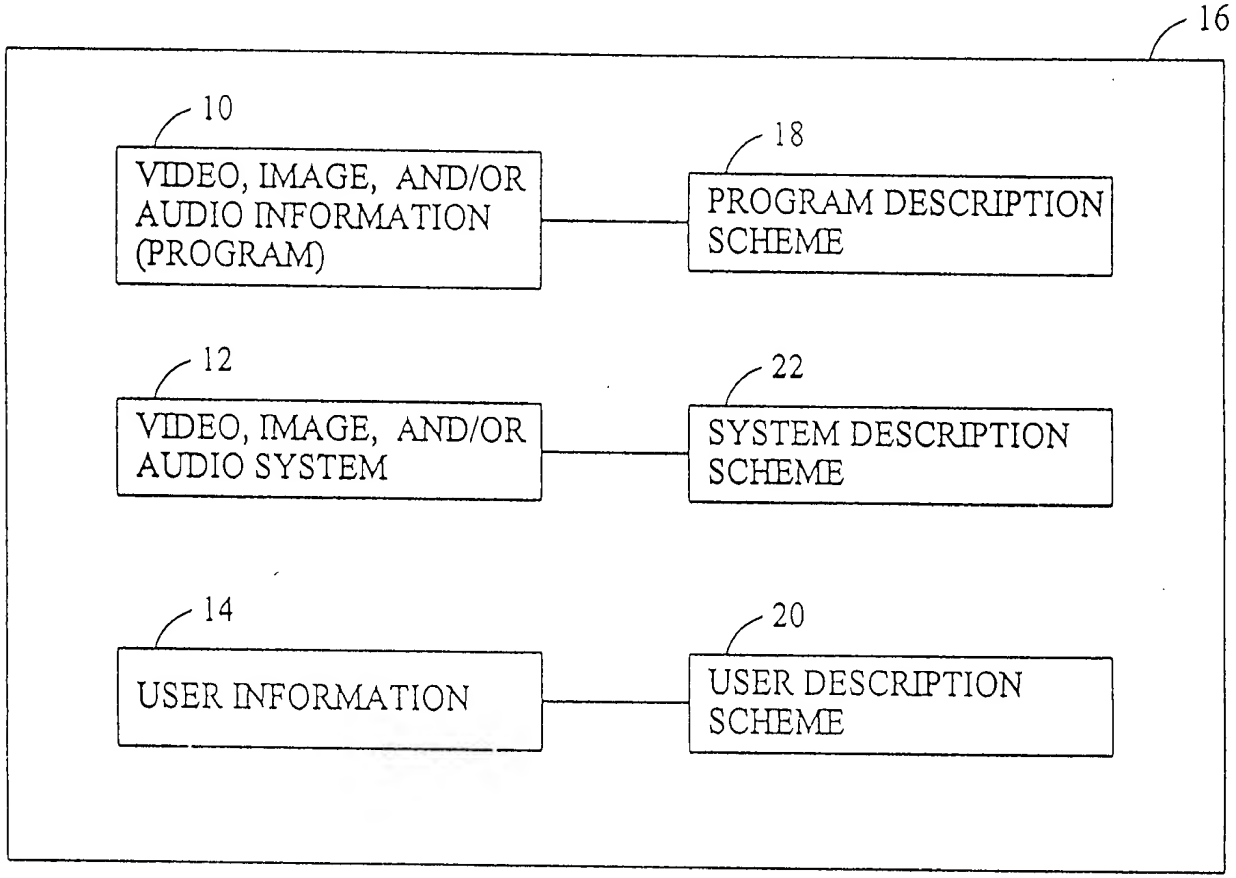
16
10
VIDEO, IMAGE, AND/OR AUDIO INFORMATION (PROGRAM)
18
PROGRAM DESCRIPTION SCHEME
12
VIDEO, IMAGE, AND/OR AUDIO SYSTEM
22
SYSTEM DESCRIPTION SCHEME
14
USER INFORMATION
20
USER DESCRIPTION SCHEME

FIG. 1

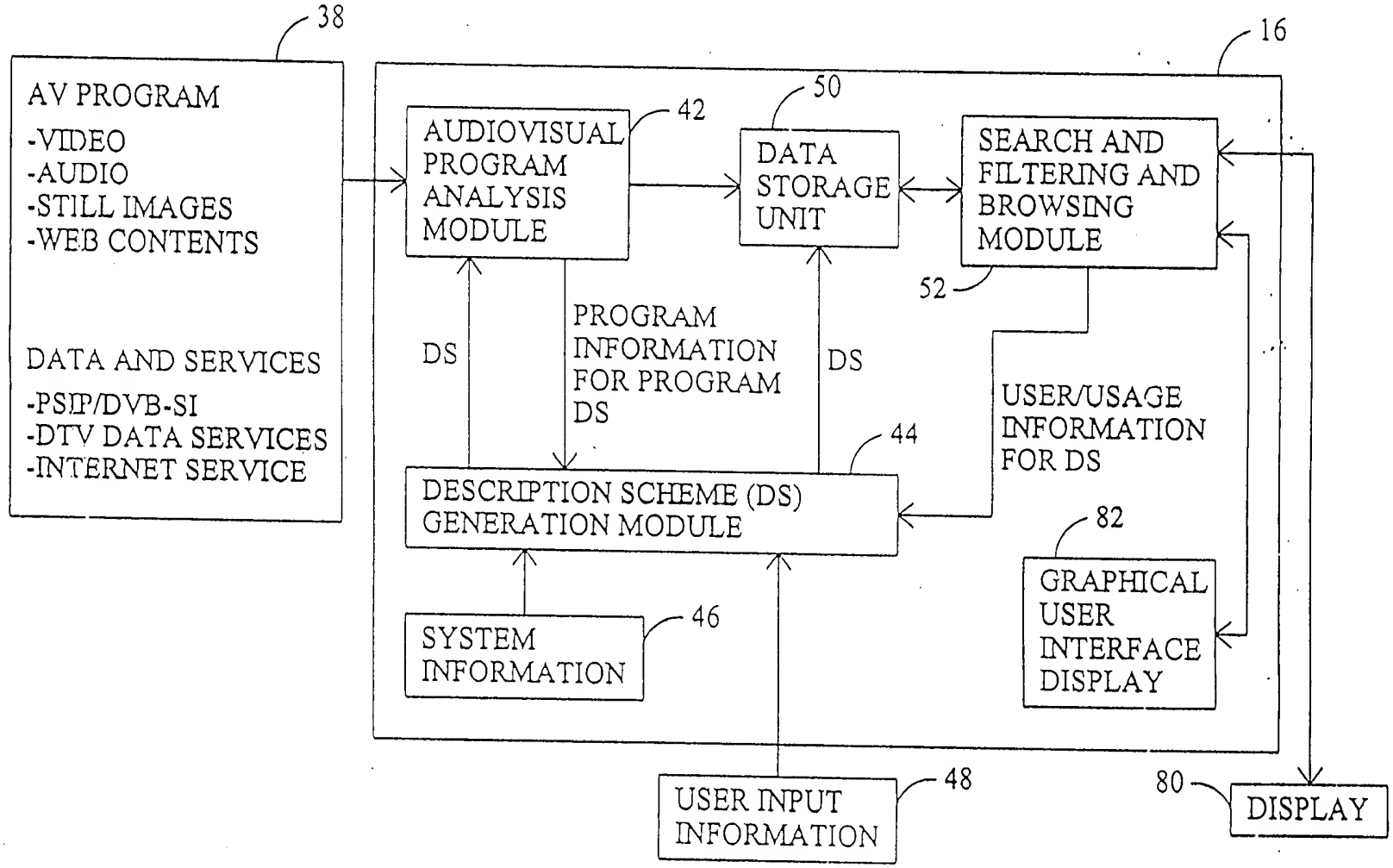

FIG. 2

09511809 .040700

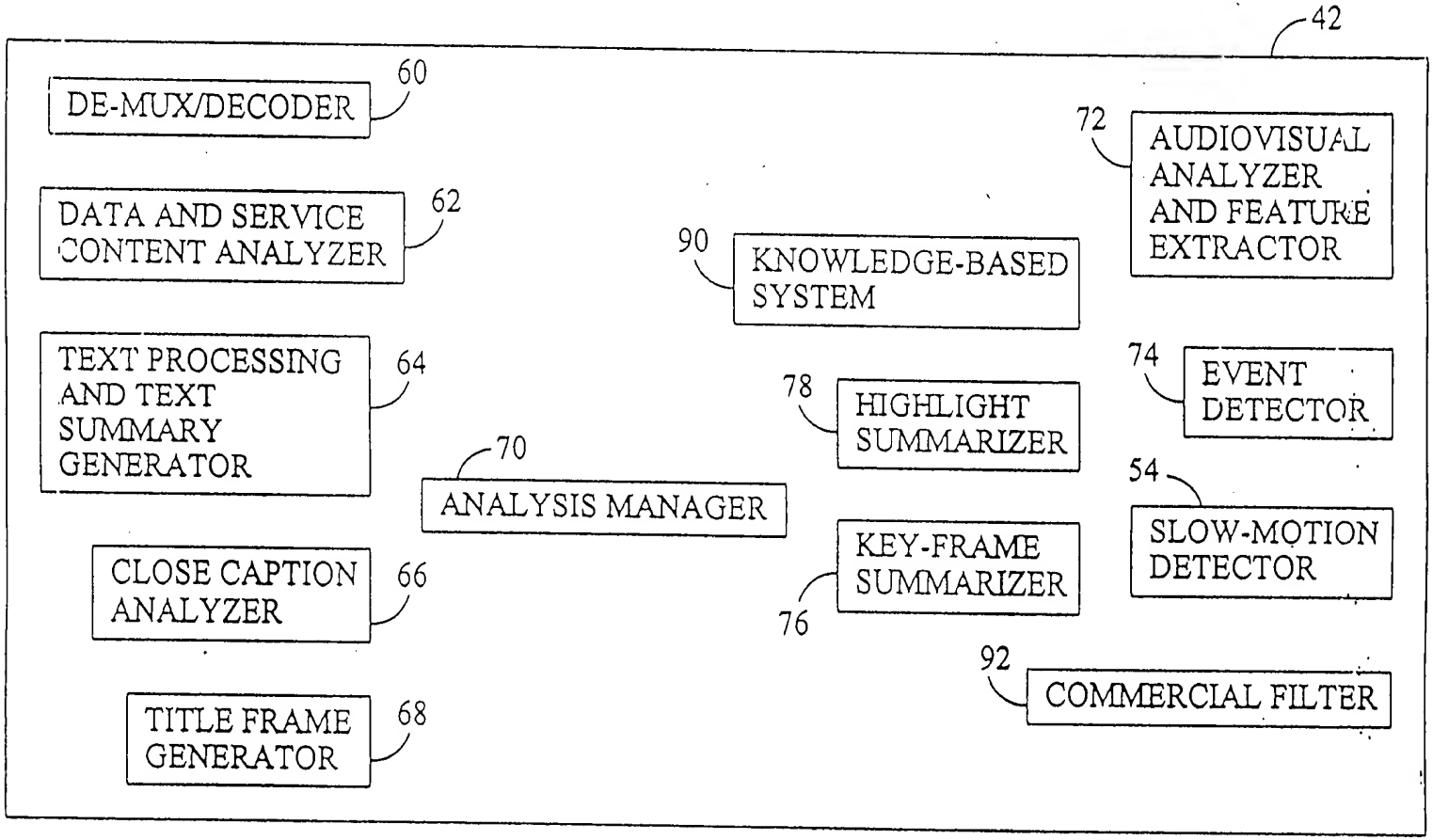
42
DE-MUX/DECODER
60
DATA AND SERVICE CONTENT ANALYZER
62
TEXT PROCESSING AND TEXT SUMMARY GENERATOR
64
CLOSE CAPTION ANALYZER
66
TITLE FRAME GENERATOR
68
ANALYSIS MANAGER
70
KNOWLEDGE-BASED SYSTEM
90
HIGHLIGHT SUMMARIZER
78
KEY-FRAME SUMMARIZER
76
AUDIOVISUAL ANALYZER AND FEATURE EXTRACTOR
72
EVENT DETECTOR
74
SLOW-MOTION DETECTOR
54
COMMERCIAL FILTER
92

FIG. 3

Thumbnail View (Category)

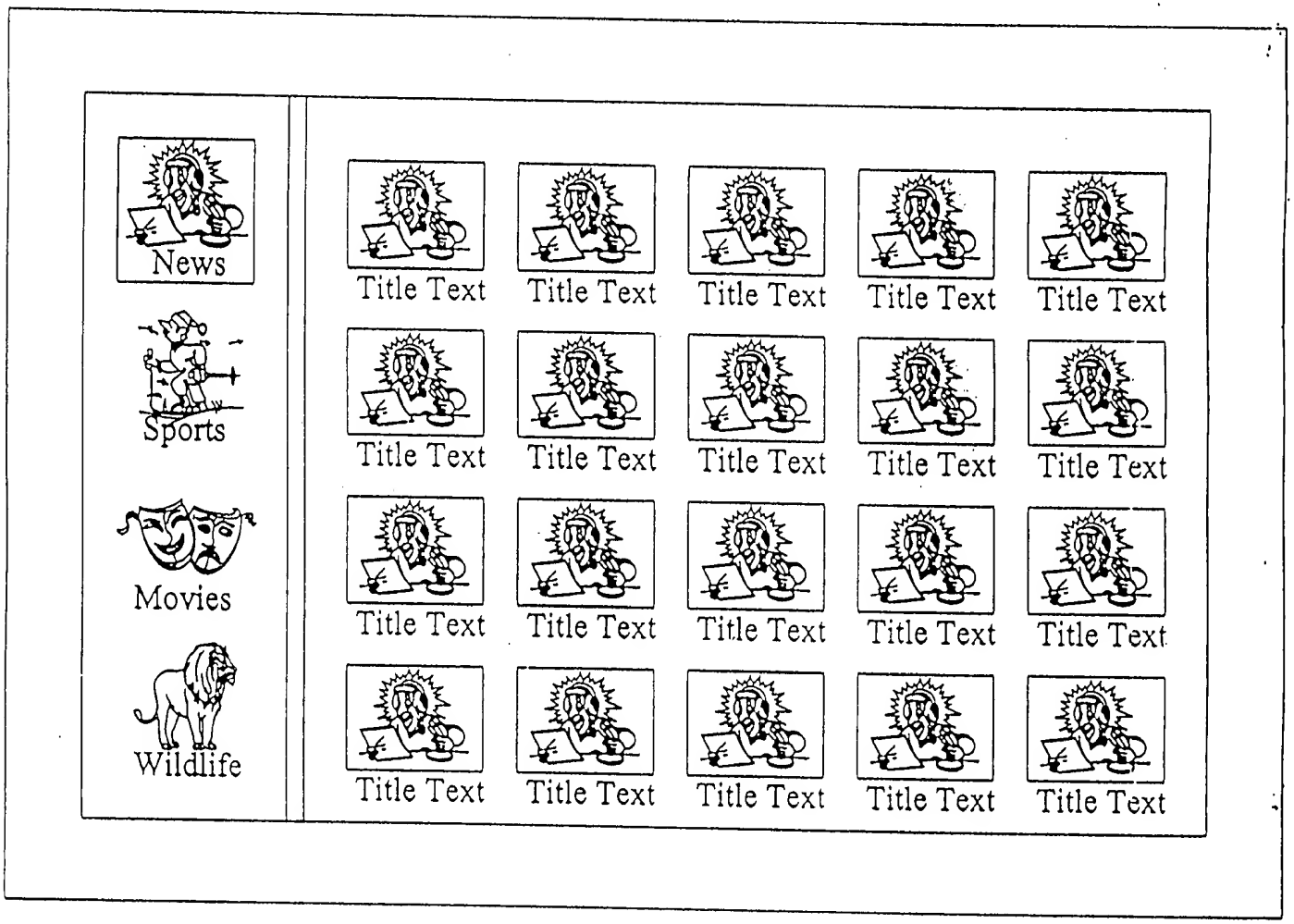

FIG. 4

09544908 .040700

Thumbnail View (Channel)

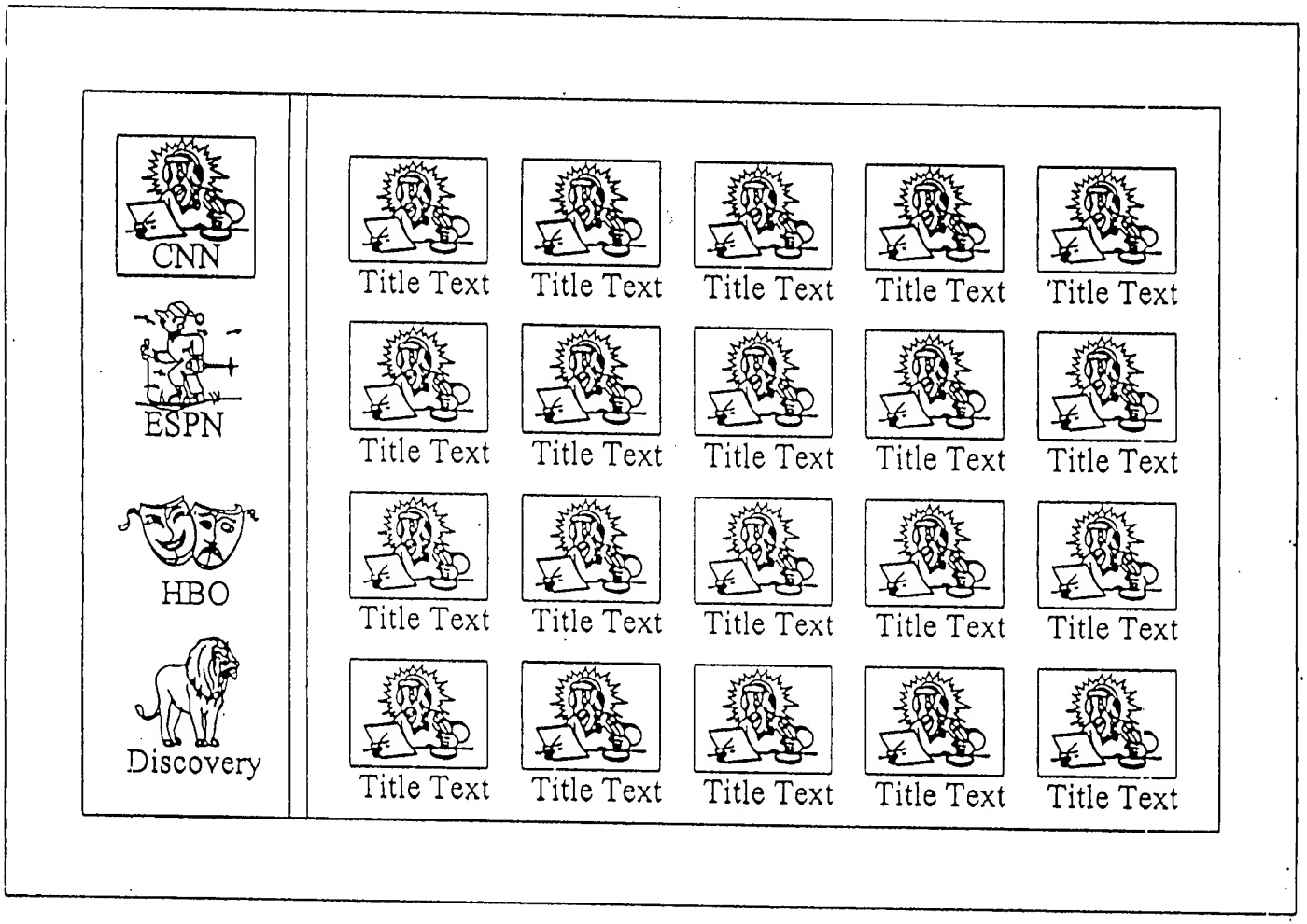

FIG. 5

Text View (Channel)

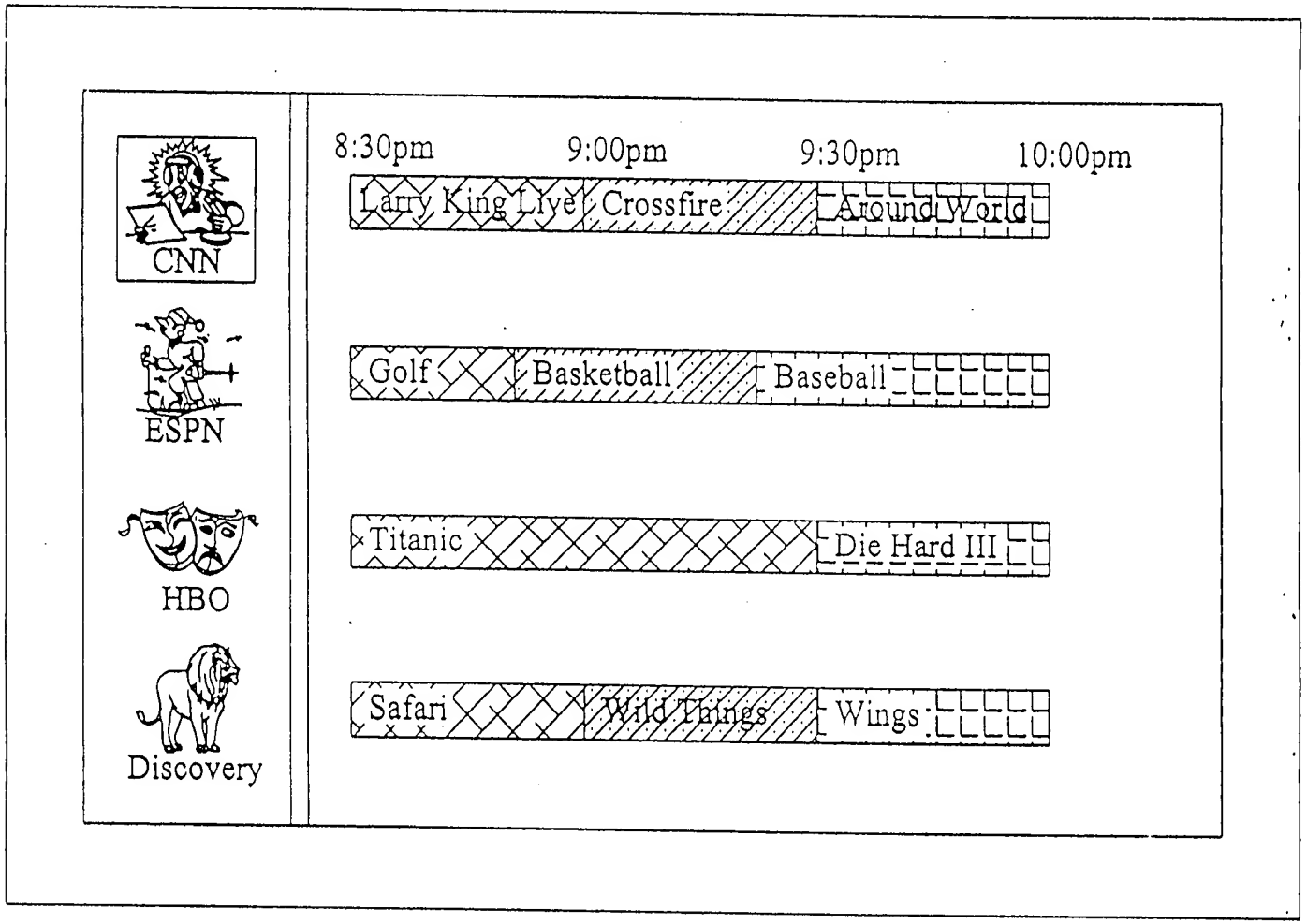

FIG. 6

09544808.040700

Frame View

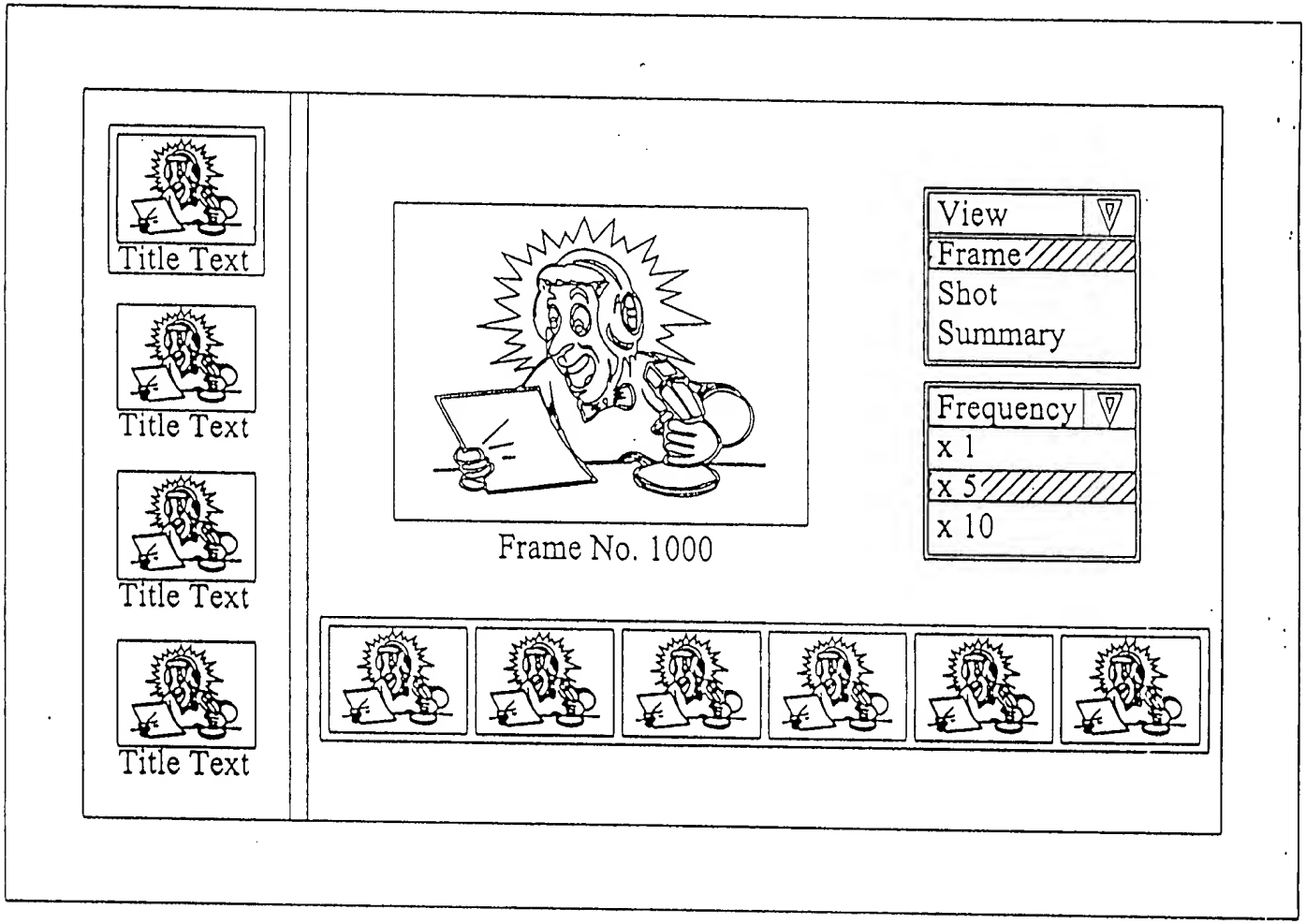

FIG. 7

09544808 .040700

Shot View

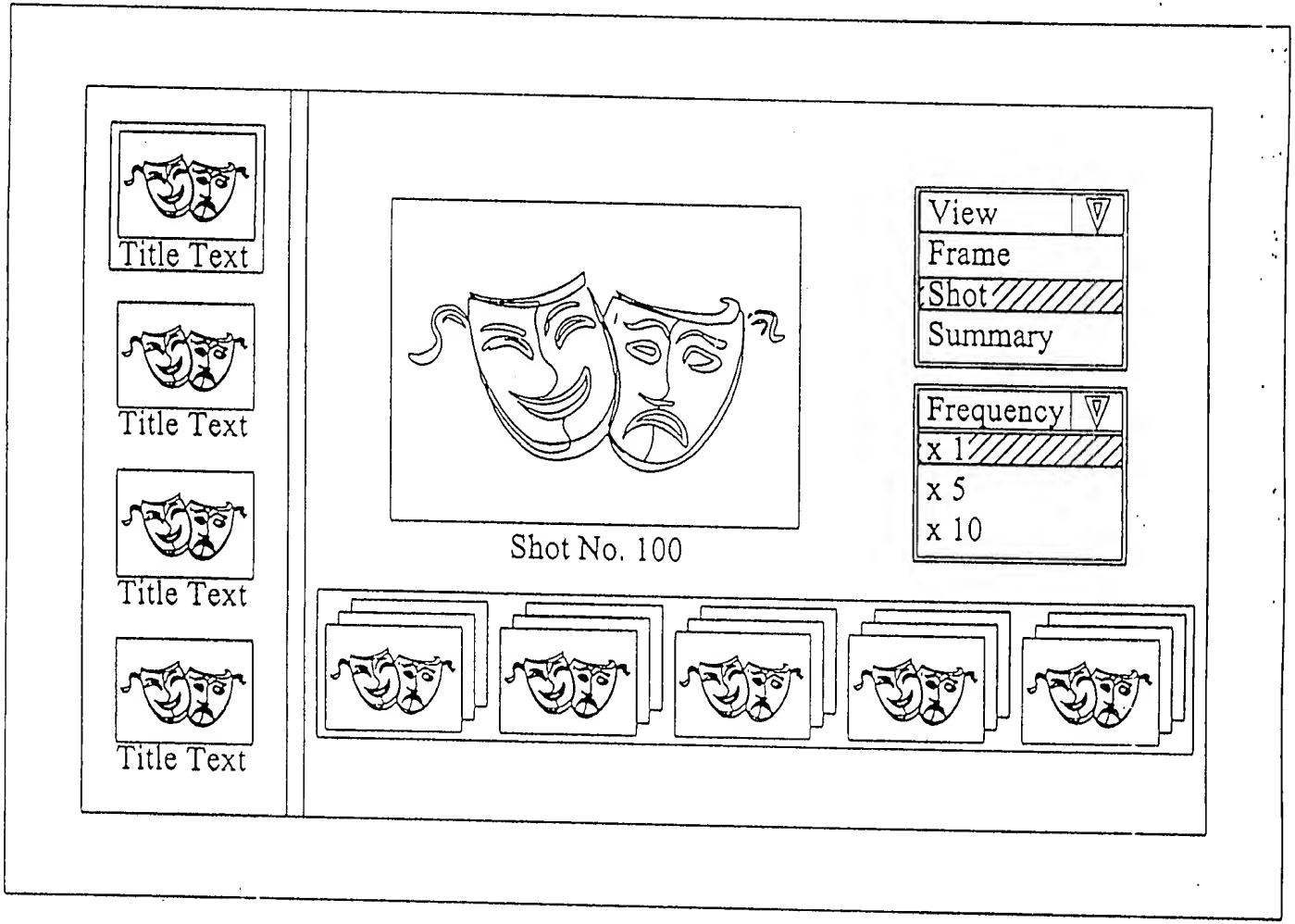

FIG. 8

09411908 .040700

Key Frame View

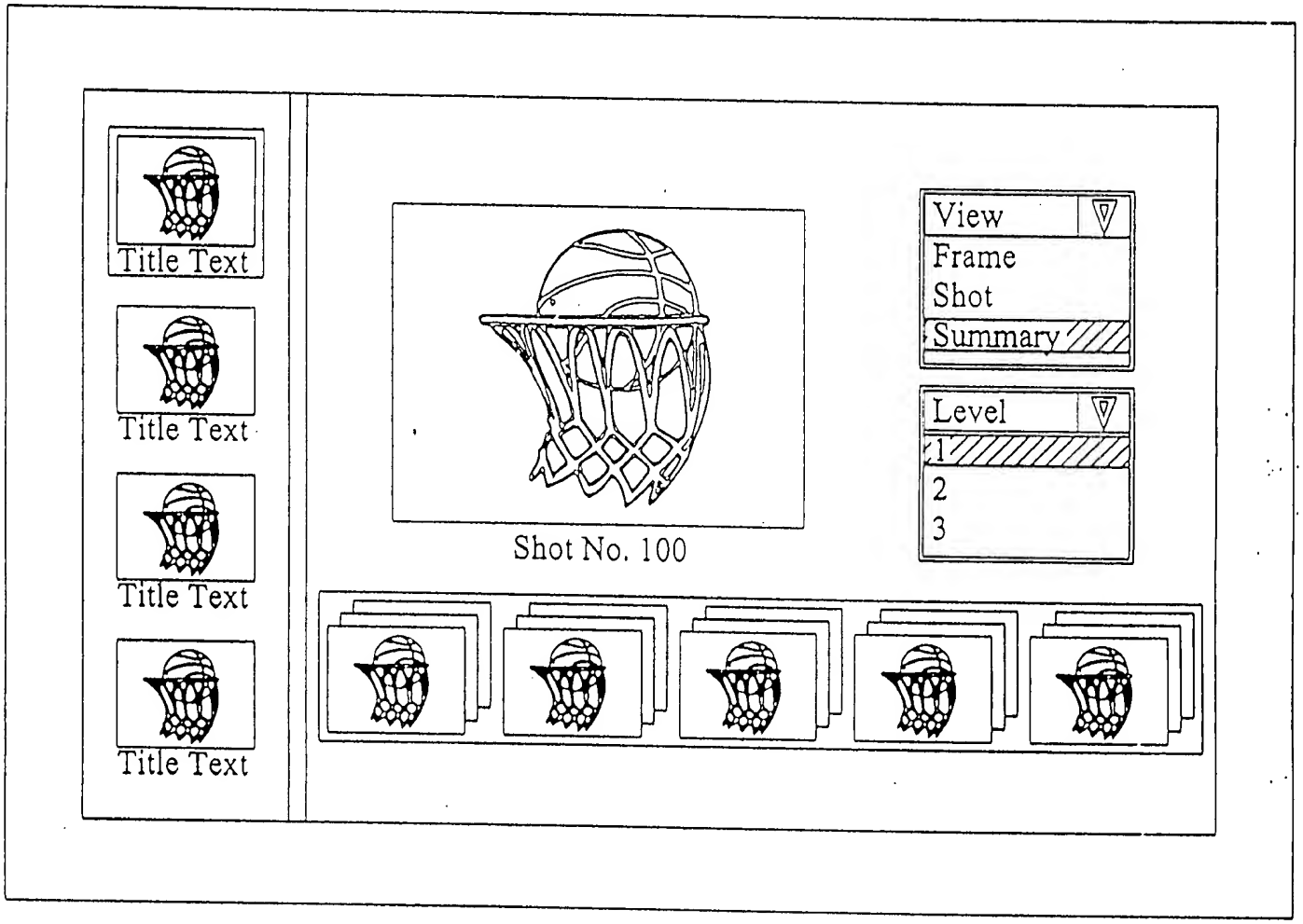

FIG. 9

09511909 .040700

Highlight View

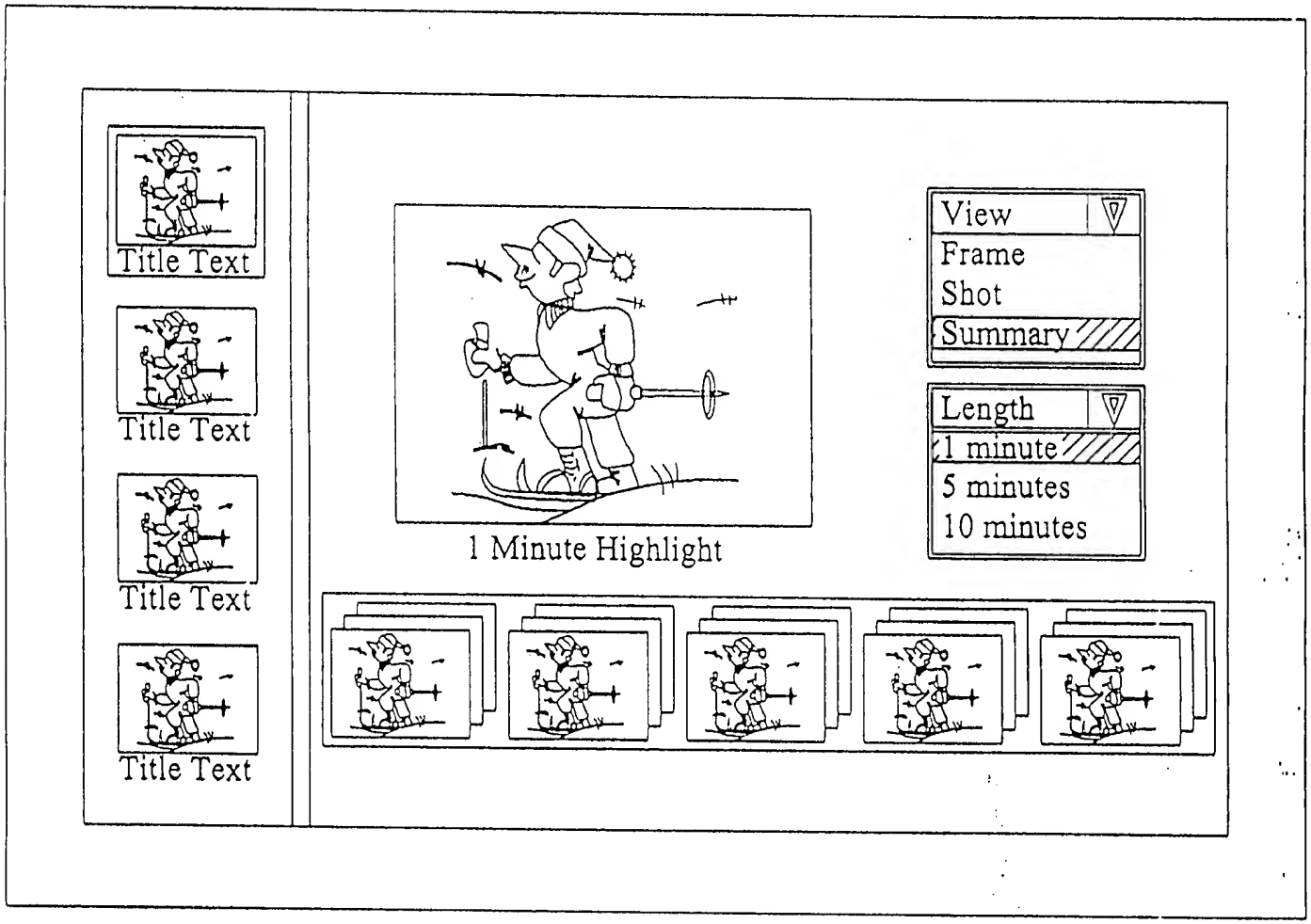

FIG. 10

Event View

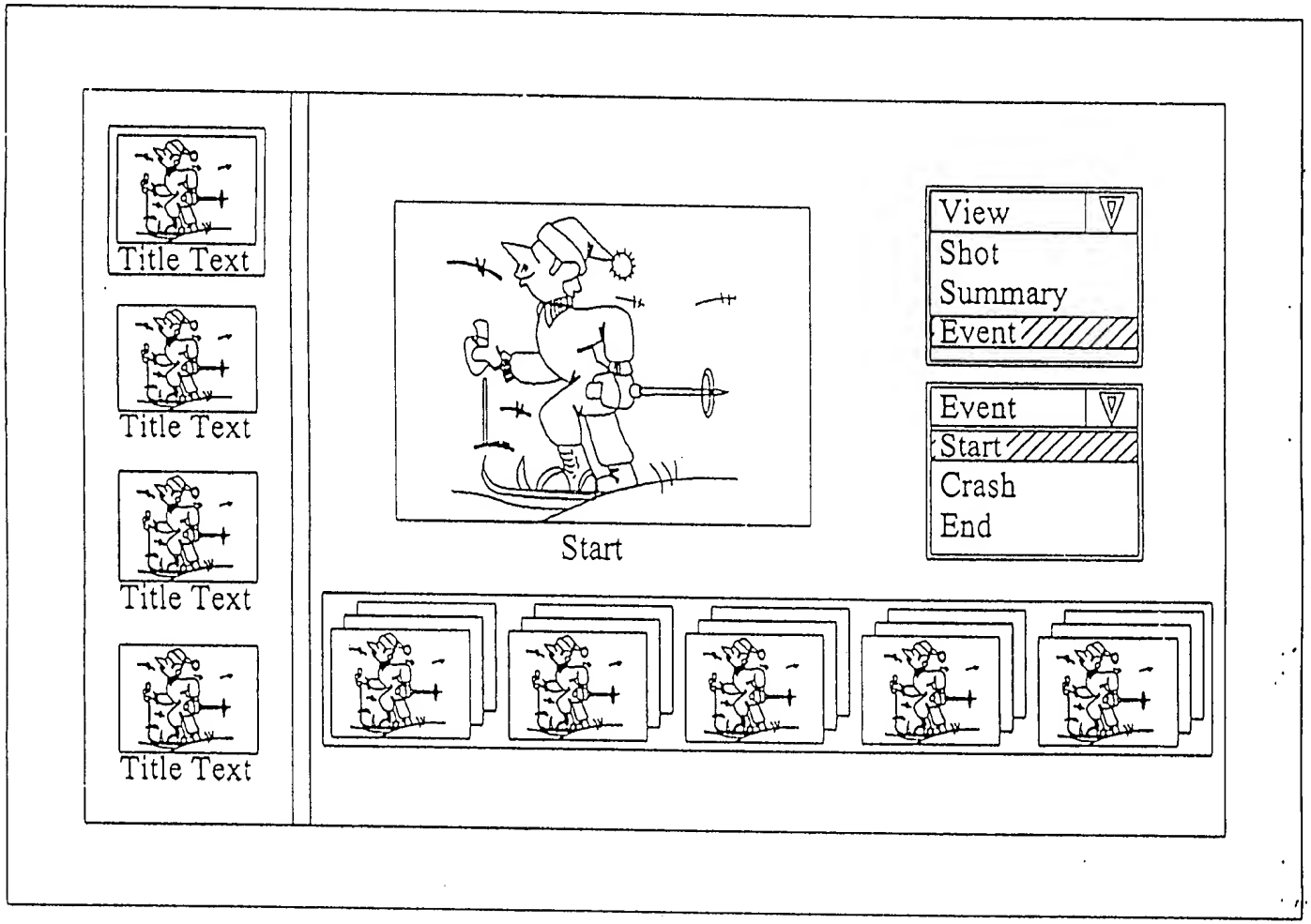

FIG. 11

Character/Object View

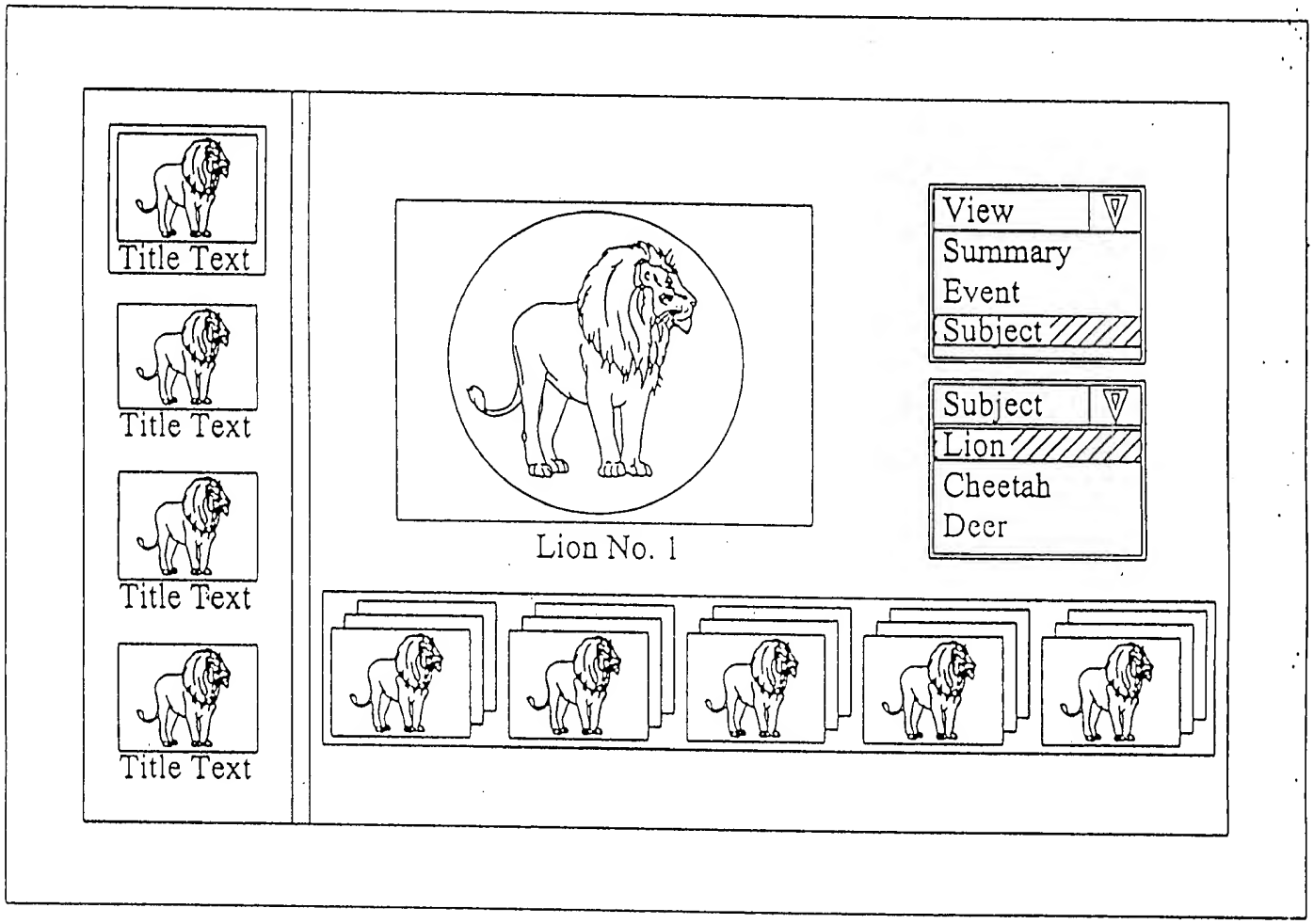

FIG. 12

09544808 .040700

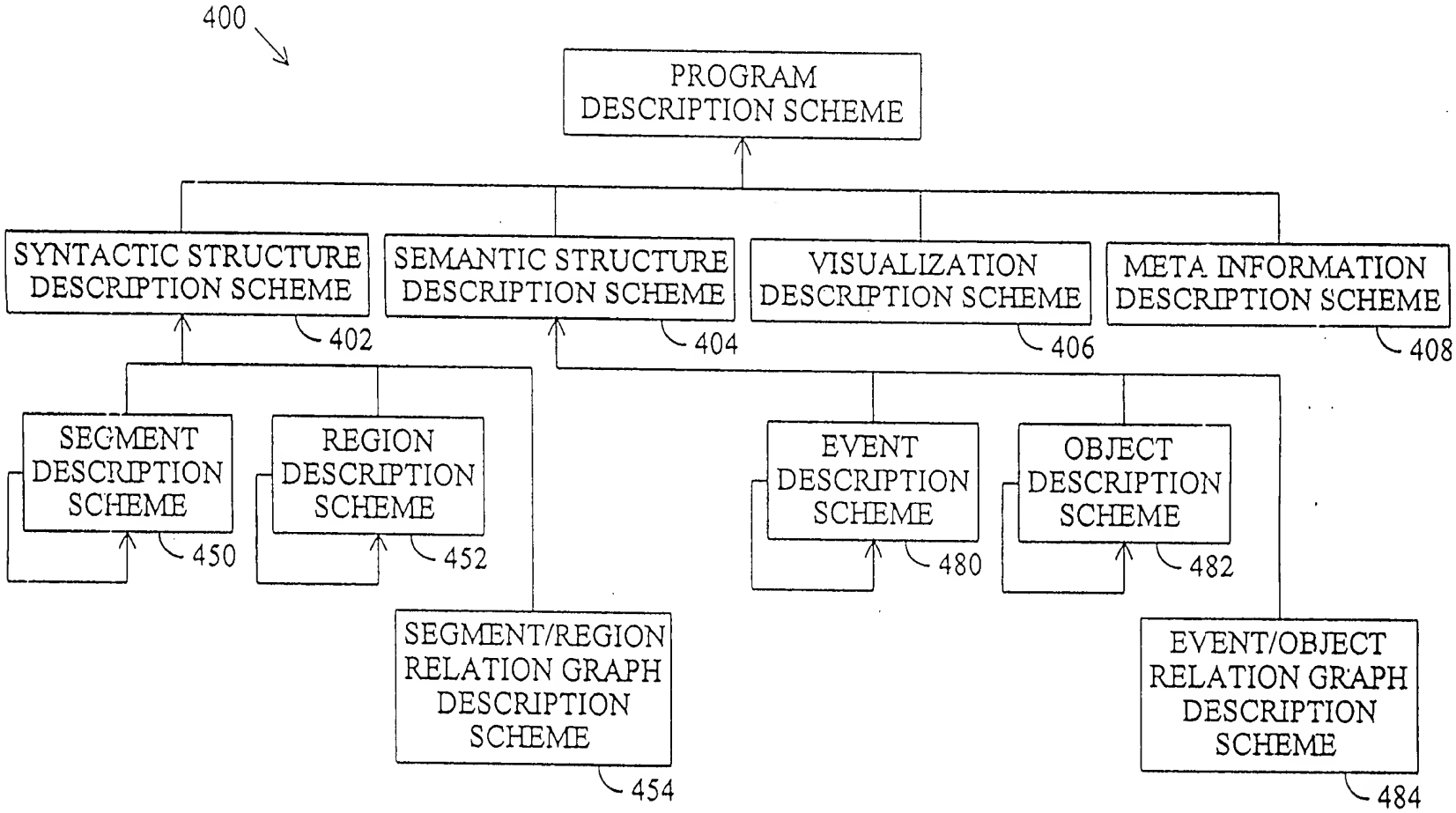

FIG. 13

09544809 .040700

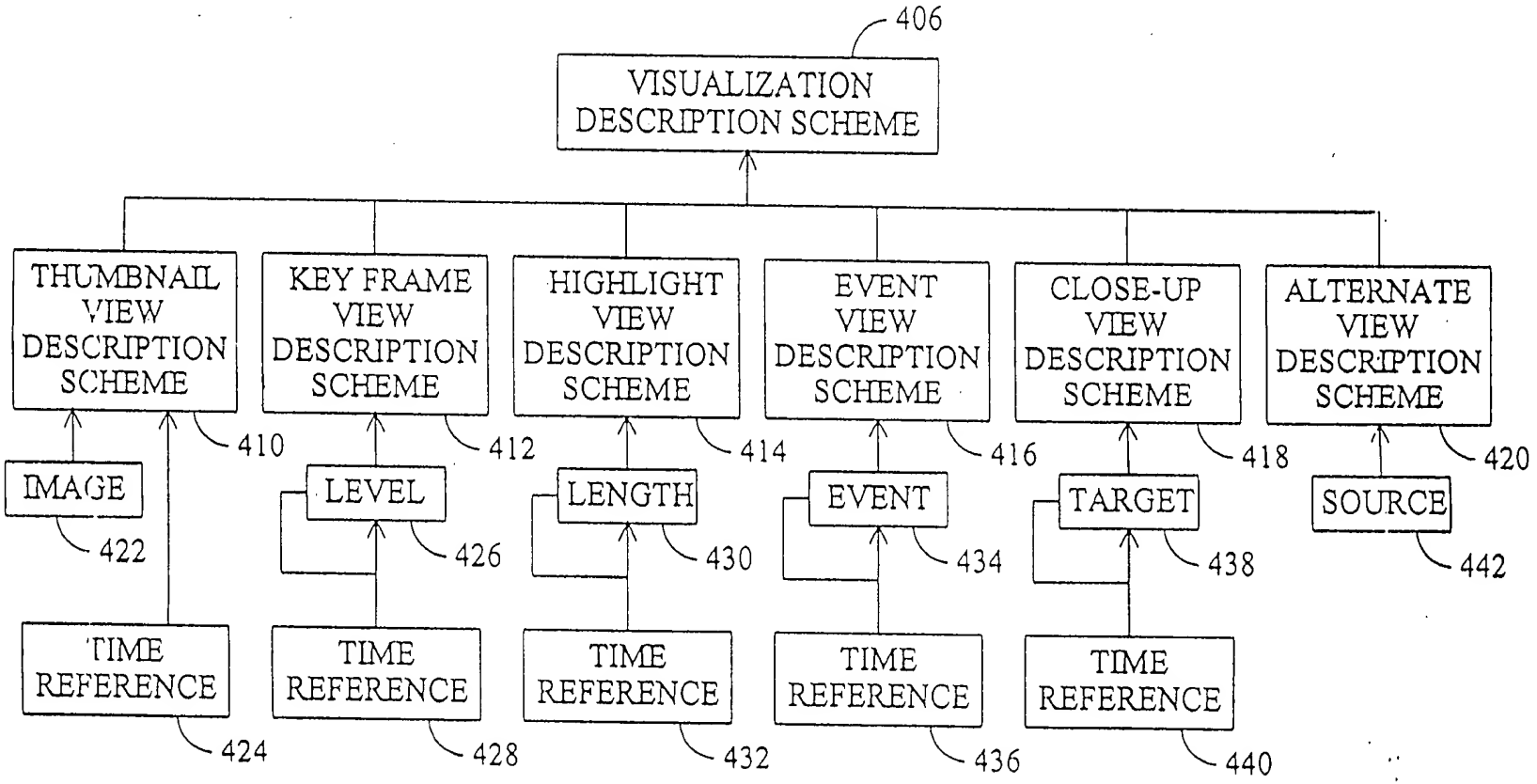

FIG. 14

09544809 .040700

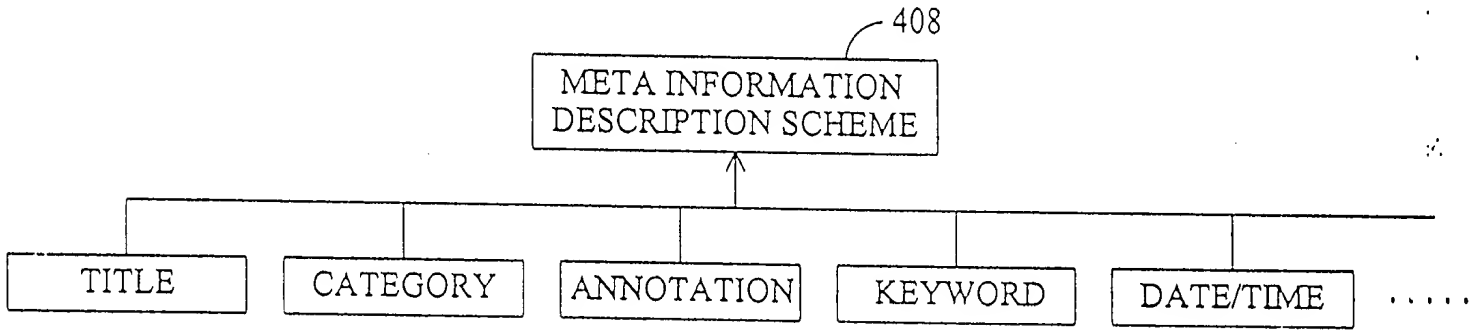

FIG. 15

09544909 .040700

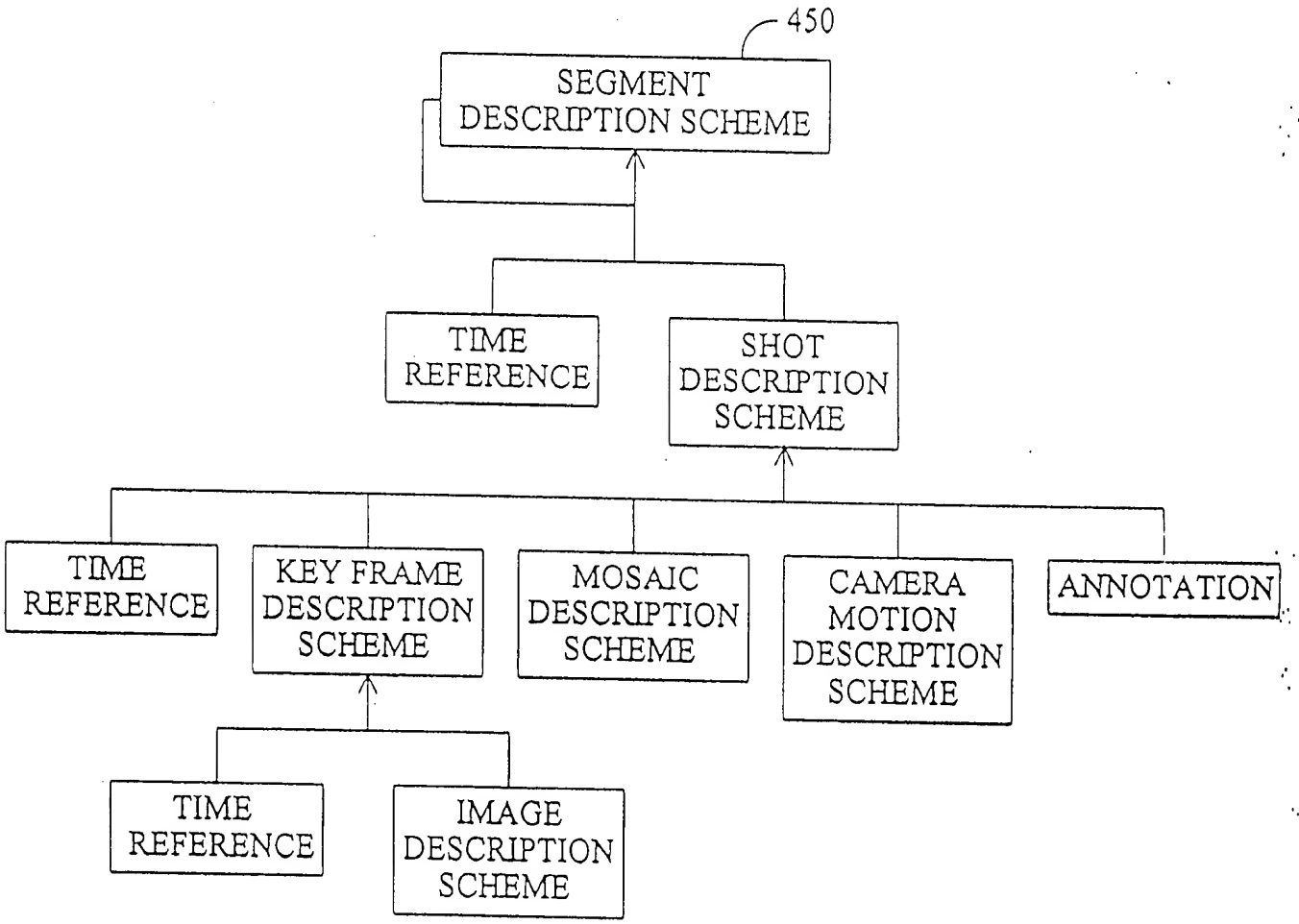

FIG. 16

09611909 .040700

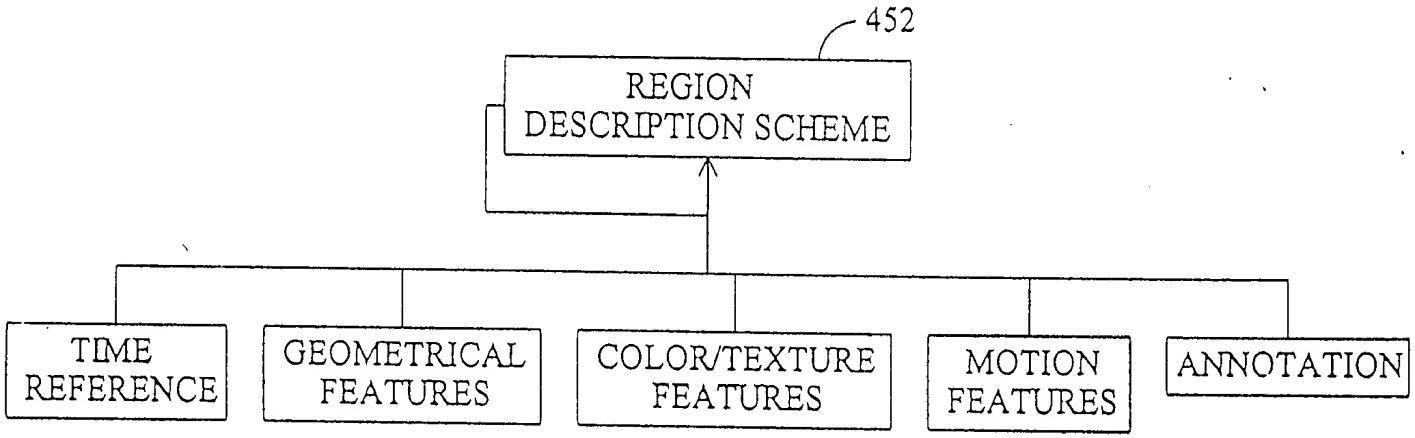

FIG. 17

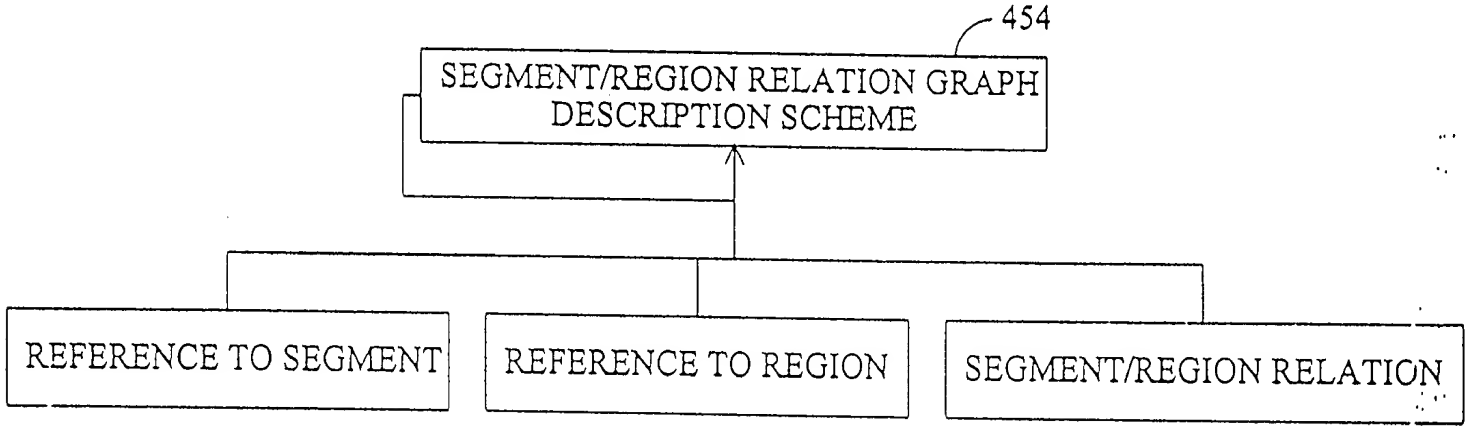

FIG. 18

09511903.040700

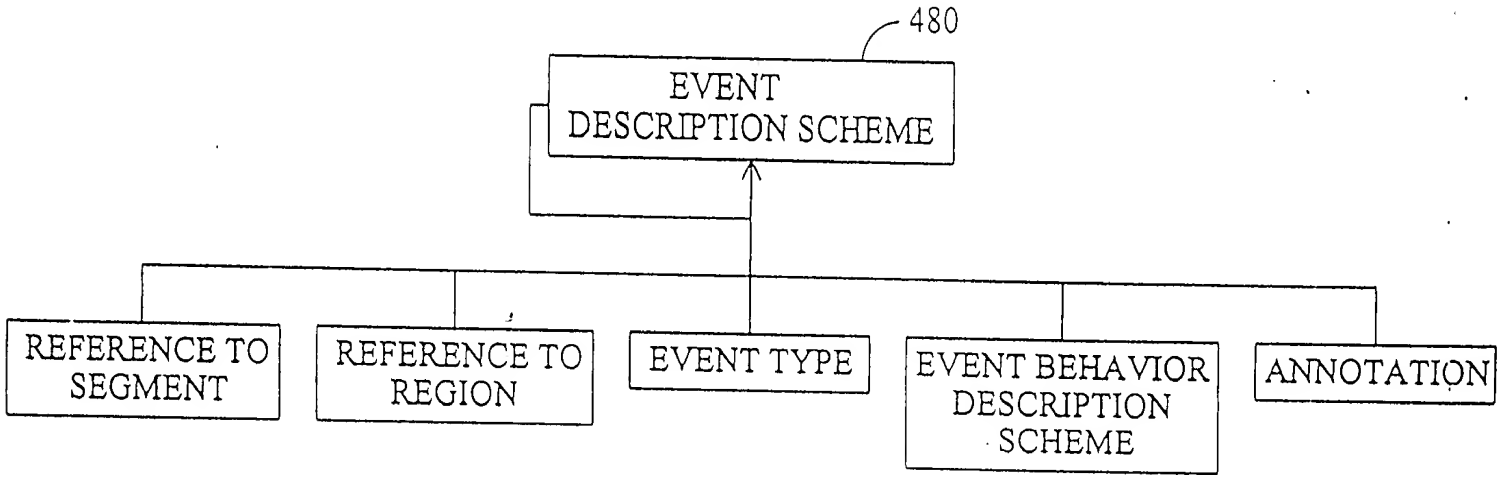

FIG. 19

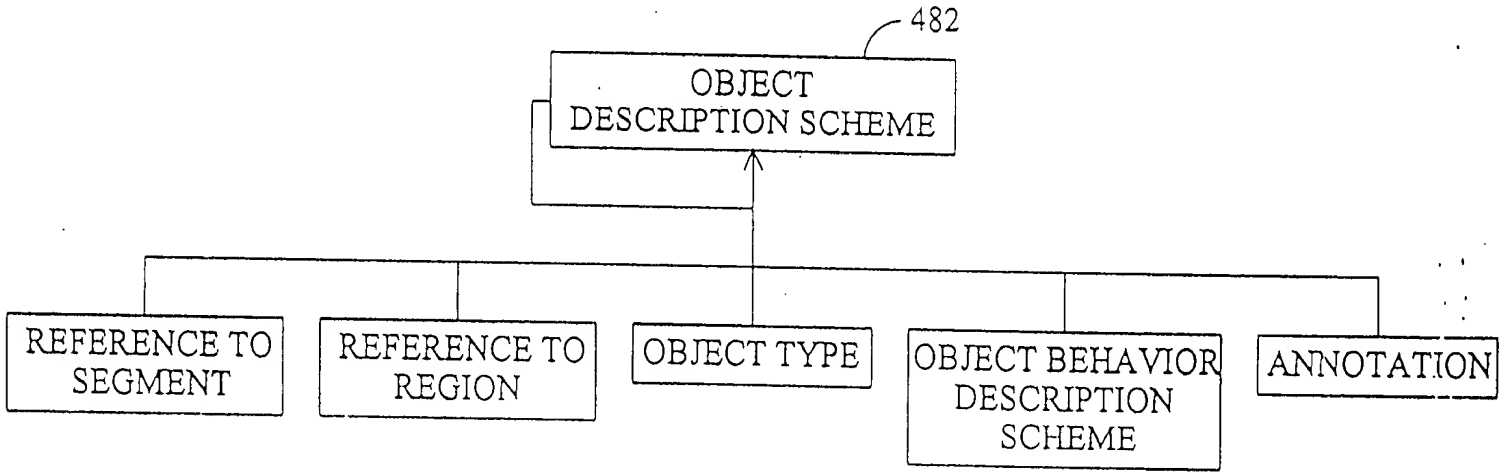

FIG. 20

09544909 .040700

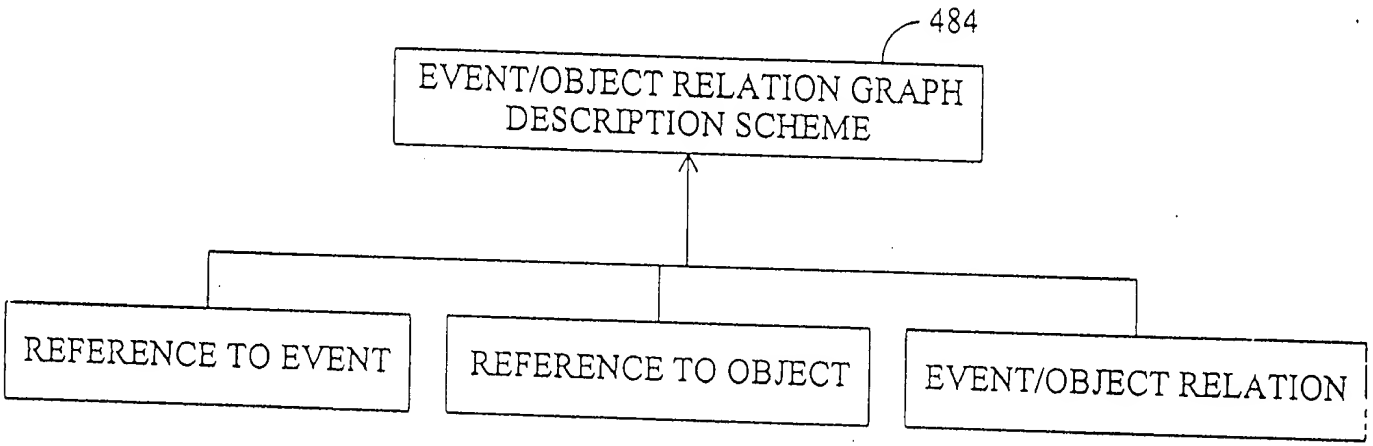
484
EVENT/OBJECT RELATION GRAPH DESCRIPTION SCHEME
REFERENCE TO EVENT
REFERENCE TO OBJECT
EVENT/OBJECT RELATION

FIG. 21

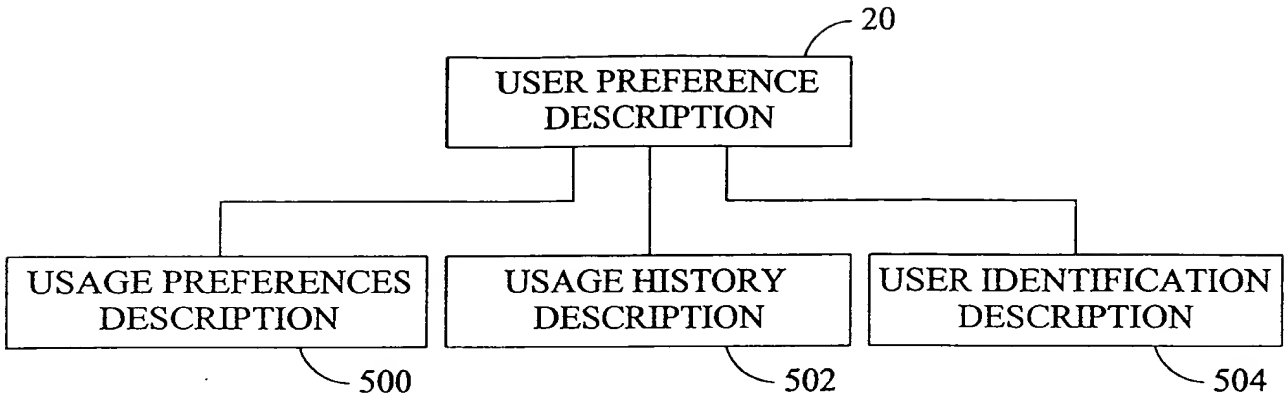

FIG. 22

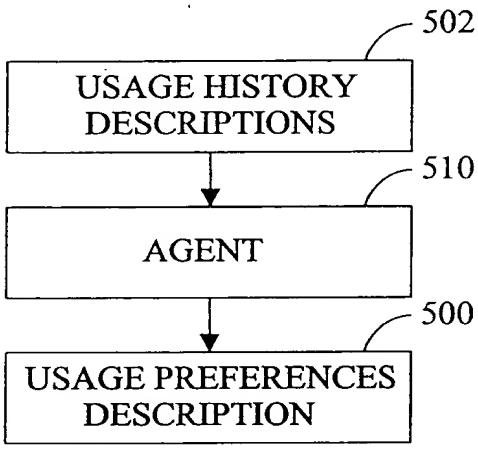

FIG. 23

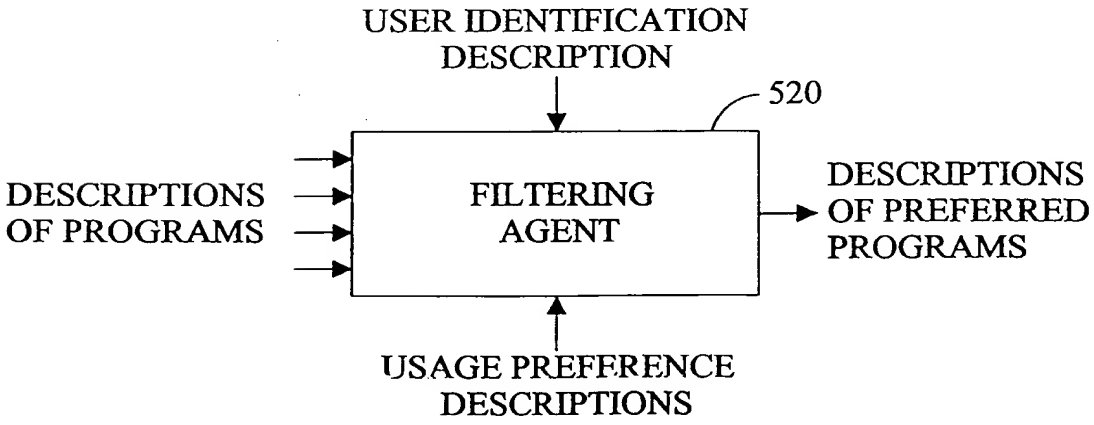

FIG. 24

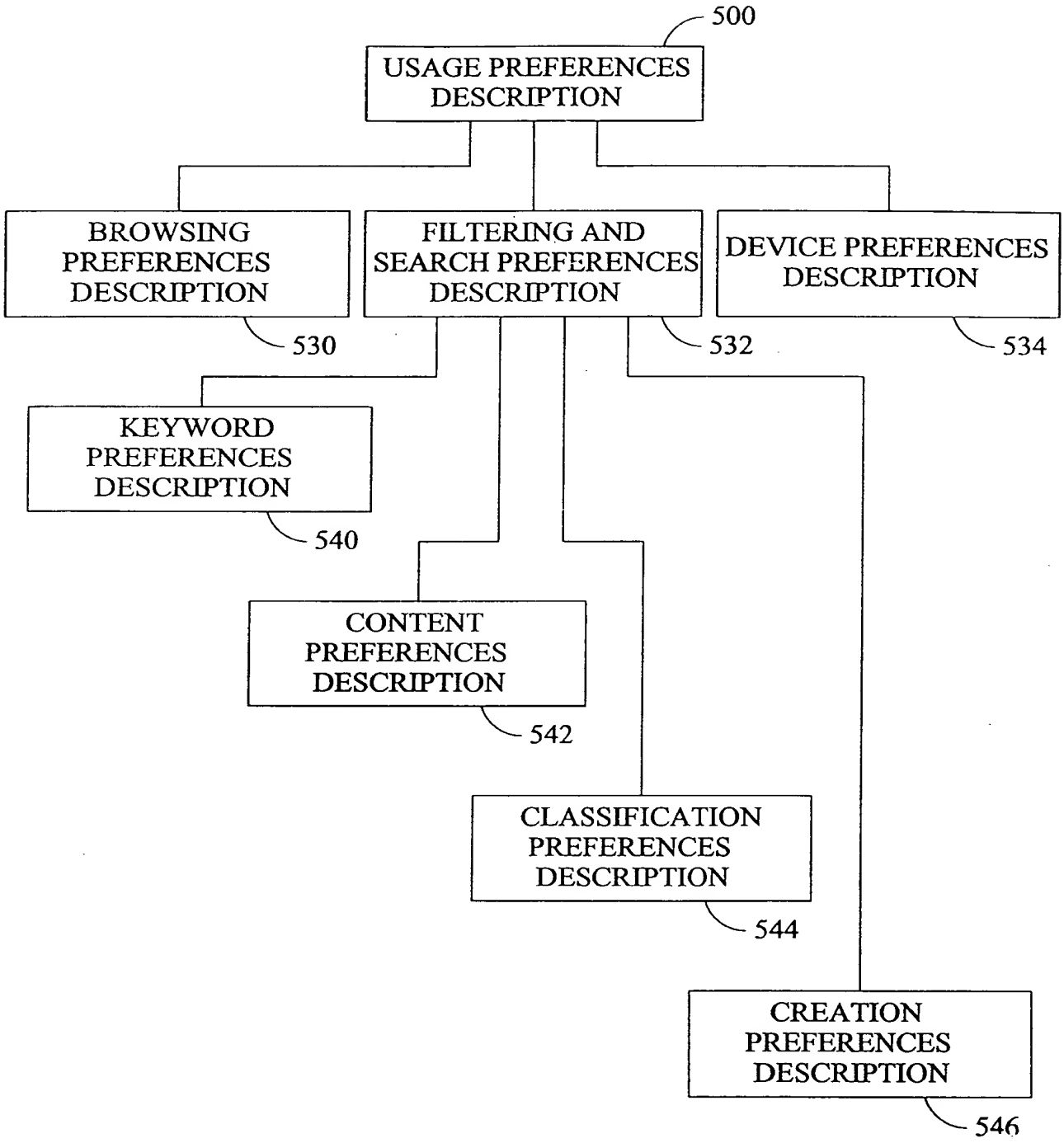
500
USAGE PREFERENCES DESCRIPTION
BROWSING PREFERENCES DESCRIPTION
530
FILTERING AND SEARCH PREFERENCES DESCRIPTION
532
DEVICE PREFERENCES DESCRIPTION
534
KEYWORD PREFERENCES DESCRIPTION
540
CONTENT PREFERENCES DESCRIPTION
542
CLASSIFICATION PREFERENCES DESCRIPTION
544
CREATION PREFERENCES DESCRIPTION
546

FIG. 25

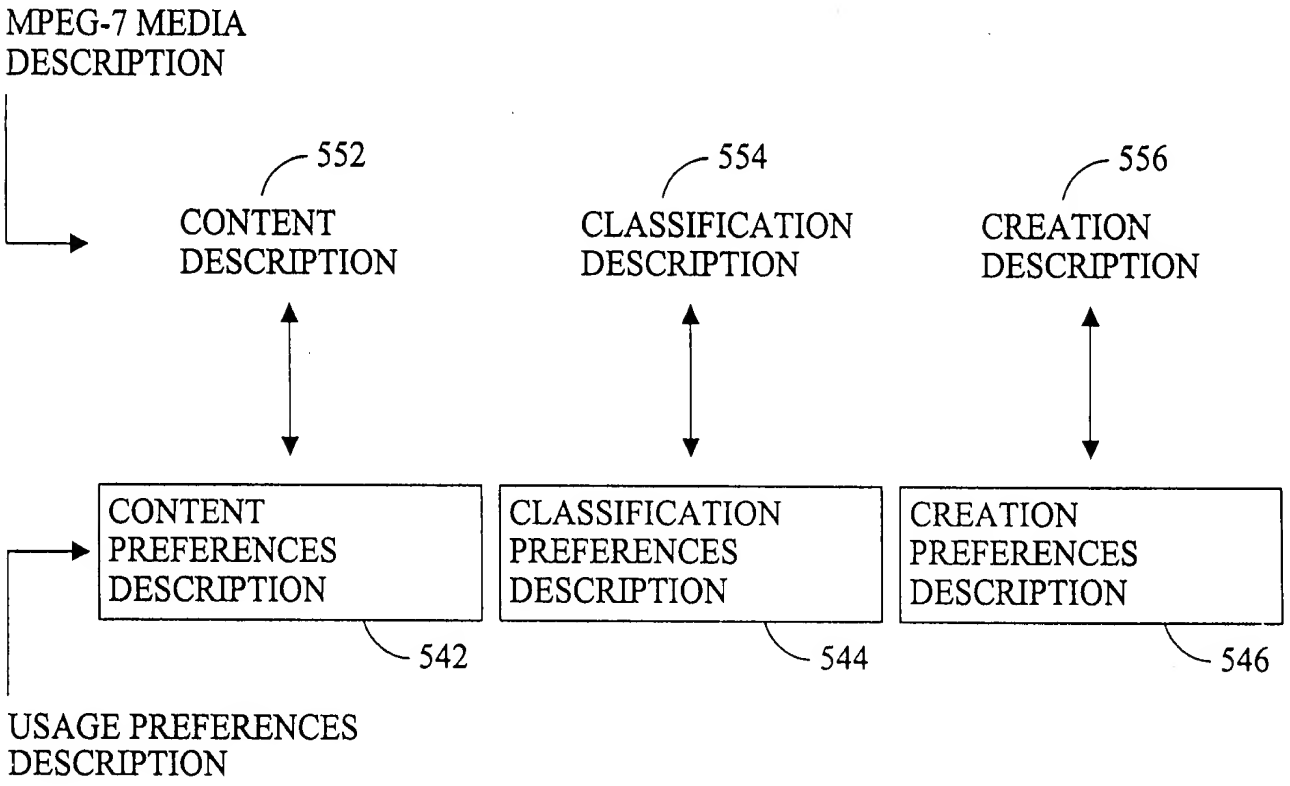

FIG. 26

09544902 .040700

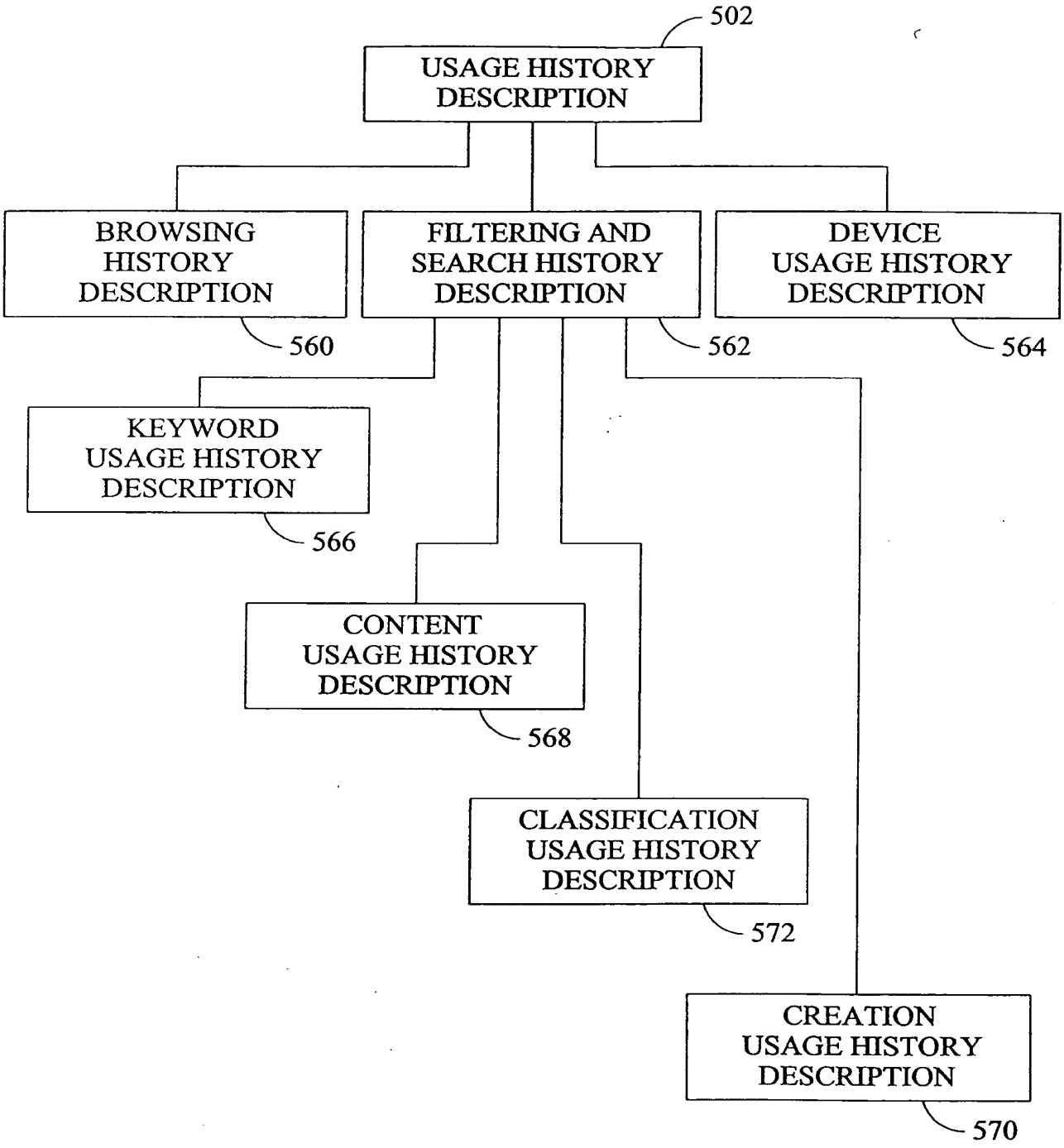
502
USAGE HISTORY DESCRIPTION
BROWSING HISTORY DESCRIPTION
FILTERING AND SEARCH HISTORY DESCRIPTION
DEVICE USAGE HISTORY DESCRIPTION
560
562
564
KEYWORD USAGE HISTORY DESCRIPTION
566
CONTENT USAGE HISTORY DESCRIPTION
568
CLASSIFICATION USAGE HISTORY DESCRIPTION
572
CREATION USAGE HISTORY DESCRIPTION
570

FIG. 27

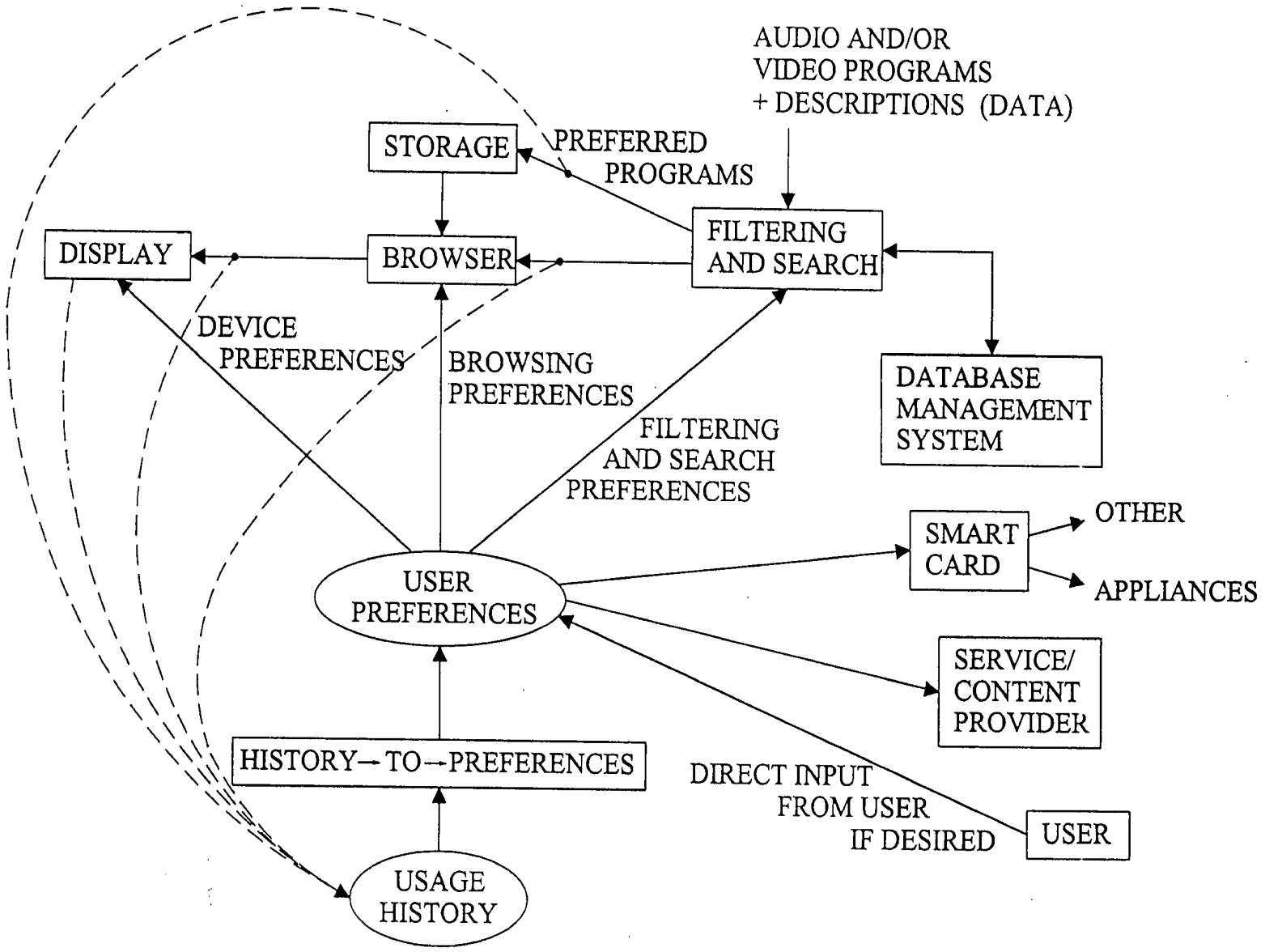

FIG. 28

09544809 .040700

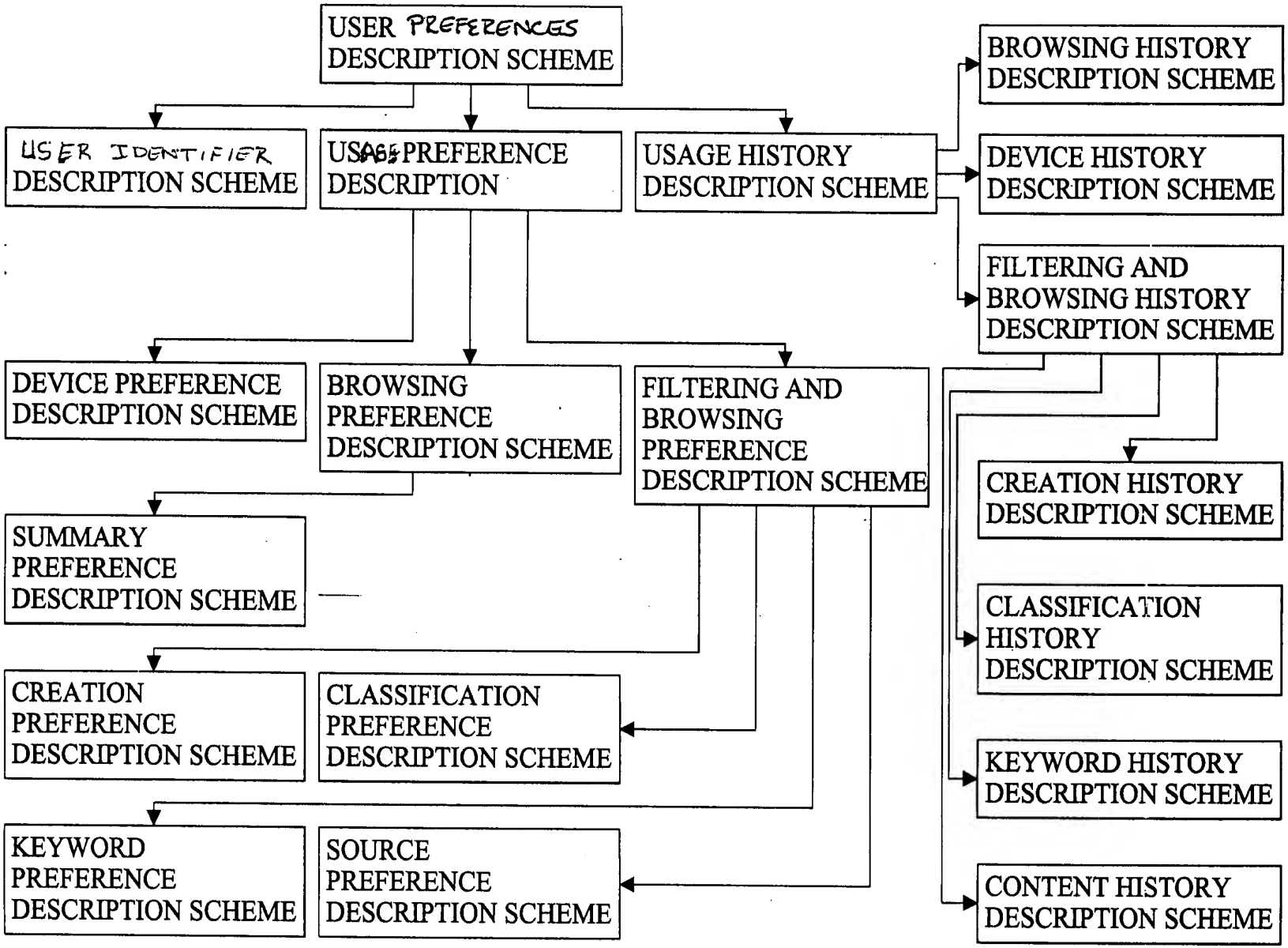
USER PREFERENCES DESCRIPTION SCHEME
USER IDENTIFIER DESCRIPTION SCHEME
USAGE PREFERENCE DESCRIPTION
USAGE HISTORY DESCRIPTION SCHEME
BROWSING HISTORY DESCRIPTION SCHEME
DEVICE HISTORY DESCRIPTION SCHEME
FILTERING AND BROWSING HISTORY DESCRIPTION SCHEME
DEVICE PREFERENCE DESCRIPTION SCHEME
BROWSING PREFERENCE DESCRIPTION SCHEME
FILTERING AND BROWSING PREFERENCE DESCRIPTION SCHEME
CREATION HISTORY DESCRIPTION SCHEME
SUMMARY PREFERENCE DESCRIPTION SCHEME
CLASSIFICATION HISTORY DESCRIPTION SCHEME
CREATION PREFERENCE DESCRIPTION SCHEME
CLASSIFICATION PREFERENCE DESCRIPTION SCHEME
KEYWORD HISTORY DESCRIPTION SCHEME
KEYWORD PREFERENCE DESCRIPTION SCHEME
SOURCE PREFERENCE DESCRIPTION SCHEME
CONTENT HISTORY DESCRIPTION SCHEME

FIG. 29